

# Relationship Orientation of Supplier-Manufacturer and Sourcing Project Success: Partial Least Squares Analysis

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**Abstract.** The purpose of the current study was to investigate the relationship between relational-oriented exchange and outsourcing success of supplier-manufacturer relationship within Malaysia. This study used the partial least squares (PLS) and structural equation modeling (SEM) tool to test the hypotheses. The data was gathered from a postal survey of 865 electrical & electronics sub-sector, of which 216 respondents participated in this study. The result indicated that relational-oriented exchange was positively related to the outsourcing success. Implications of the findings are further elaborated.

**Keywords:** strategic relationship, supplier-manufacturer relationship, performance, outsourcing success, Malaysia

## 1. Introduction

The focus of this research is on the relationships of strategic, outsourcing success, and the performance of the relationship. A questionnaire survey is used to identify how suppliers deal with manufacturers. Data is collected by a postal survey from the electrical & electronics sub-sector (E&E). Therefore, the main goal of the study is identified as: To determine the positive relationship between supplier-manufacturer relationship with the sourcing project success in terms of strategic performance.

Evidence suggests that firm performance is affected by its abilities to integrate, build, and reconfigure resources. This process is referred to as dynamic capabilities [1]. In particular, dynamic capabilities have been used to explain why firms in the same industry perform differently. For example, [2] suggest that dynamic capabilities are embedded within firms and consist as a set of specific and identifiable strategic and organizational routines. [3] found that firms with a dedicated capability to manage inter firm relationships generated substantially higher market value than firms without such capability. Stated differently, companies that systematically invest in developing the ability to manage supplier-manufacturer relationship consistently perform better than others that choose not to make such investments. Accordingly, it can be expected that investments in development of relational-oriented exchange will reduce coordination and integration costs, and improve the synergistic benefits available through outsourcing success.

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## 2. Research Context and Research Model

### 2.1. Outsourcing Success

Outsourcing should have a specific goal as an objective with a measurable outcome. Successful outsourcing refers to what implementation factors the company undertakes in order to achieve its objectives, goals and expectations [4]. Organizations would be asked to identify their most specific goals or projected benefits to indicate improvement achieved as a result of the out-sourcing effect. The present research choices included: financial performance and strategic performance of outsourcing efforts, which were suggested by several authors [5] [6] [7]. Traditionally, financial data has been considered as the basis for organizational decision-making for a long time; however, managers have no idea of the utility of non-financial data for improving decision making [8]. This research will introduce Kaplan and Norton's balanced scorecard, the mixed method of assessing outsourcing success using both financial and non-financial data.

### 2.2. Relational-Oriented Exchange

In this study, relational exchange refers to durable relationships in terms of principles and norms which govern the behavior of two parties. Following previous scholars [9] [10], this study defines relational-oriented exchange as “the extent of long-term supplier-manufacturer relationship of electrical and electronic industry that are managed primarily by relational norms and ethical principles”. The norms and principles are as means of relationship control and coordination. The definition differs from other types of relationships like vertical integration, power hegemony or a market relationship. This is because of the co-existence of understood continuity agreements, cooperation norms and action procedures. Figure 1 shows the research model.

H1: Relational-oriented exchange has a significant positive impact on outsourcing success

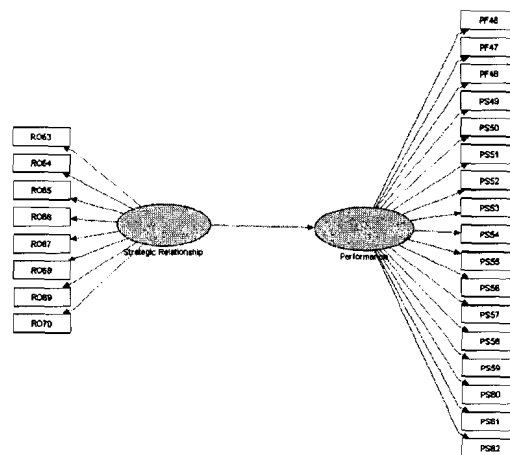


Fig. 1: Research model

## 3. Research Method

A survey method is commonly used in majority of empirical studies. [11] explained that survey method encompasses broader population study on larger sample size. It is relatively easy to be administrated and incurs moderate cost. Internet survey, phone interview, e-mail survey and postal survey have been considered to be employed to the targeted respondents in this study. Given such advantage, researcher can study more variables. Survey findings can be statistically tested to generalize real world

environment. The disadvantages of a survey include the potential lack of response from respondents; instruments for testing variables are largely based on perception and only cross sectional studies can be conducted at one point in time. Based on the advantage and disadvantage analysis, the survey method was used in this study in the researcher attempts to understand a broad population of Malaysia's electrical and electronic industries.

### 3.1. Data Collection

A total postal survey is sent out to 865 respondents in two waves during the months of September to November 2011 and from December 2011 to January 2012. A total of 218 were received and used to analysis which translates to about 25.2% response rate. The first wave yields 147 responses and the second wave yielded 71 responses.

### 3.2. Measures and Assessment of Goodness of Measures

Overall the questionnaire has been categorized into three sections: general information about the organization, the relational orientation of the exchange in that it enhances the relational orientation by supplier, and respondent's profile. A questionnaire using a seven-point Likert scale was used to gather data for each construct of the research model. All instruments were adapted from previous literatures and were modified to measure the performance. Questionnaires were designed based on a multiple item measurement scale adapted from previous research namely [12] [13] [14] and [15].

### 3.3. Goodness of Measures

Validity and reliability are the two main criteria used for testing goodness of measures. Validity is a test of how well a developed instrument measures the particular concept it is intended to measure while reliability is a test of how consistently a measuring instrument measures whatever concept it is measuring whereas .

### 3.4. Measurement Model

First we tested for convergent validity which is the degree to which multiple items used to measure the same concept are in agreement. This was assessed through factor loadings, composite reliability and average variance extracted [16]. As seen in Table 1, all item loadings exceeded the recommended value of 0.6 [17]. Composite reliability (CR) values, which depict the degree to which the construct indicators indicate the latent construct, exceeded the recommended value of 0.7 [16] while average variance extracted (AVE) which reflects the overall amount of variance in the indicators accounted for by the latent construct, exceeded the recommended value of 0.5 [16].

Next we proceeded to test for discriminant validity - the extent to which the measures are not a reflection of some other variables and it is indicated by the low correlations between the measure of interest and the measures of other constructs [18]. As shown in Table 2, the correlations for each construct is less than the square root of the AVE by the indicators measuring that construct indicating adequate discriminant validity [19]. In total, the measurement model demonstrates adequate convergent validity and discriminant validity.

Table 1: Measurement Model: Convergent Validity

Construct	Item	Loading	AVE <sup>a</sup>	CR <sup>b</sup>
Outsourcing Success	PF47	0.701	0.752	0.980
	PF48	0.705		
	PS49	0.816		
	PS50	0.872		

*(Table 1 continued)*

	PS51	0.857		
	PS52	0.895		
	PS53	0.921		
	PS54	0.907		
	PS55	0.925		
	PS56	0.928		
	PS57	0.925		
	PS58	0.918		
	PS59	0.853		
	PS60	0.850		
	PS61	0.873		
	PS62	0.884		
Relational-Oriented Exchange	RO63	0.936	0.842	0.977
	RO64	0.910		
	RO65	0.901		
	RO66	0.938		
	RO67	0.934		
	RO68	0.921		
	RO69	0.905		
	RO70	0.896		

<sup>a</sup> Average Variance Extracted (AVE) = (summation of the square of the factor loadings)/{( summation of the square of the factor loadings) + (summation of the error variances)}

<sup>b</sup> Composite Reliability (CR) = (square of the summation of the factor loadings)/{(square of the summation of the factor loadings) + (square of the summation of the error variances)}

Table 2: Measurement Model; Discriminant Validity

	Outsourcing Success	ROE
Outsourcing Success	<b>0.867</b>	
ROE	0.618	<b>0.918</b>

Diagonals (in bold) represent the square root of the AVE while the other entries represent the correlations.

### 3.5. Structural Model

Overall, the results of the correlation analysis revealed that dimension between ROE and outsourcing success was significant. The results of the correlation analysis suggest that high level of ROE attributes are related to high level of outsourcing success. This study hypothesized that ROE has a significant positive relationship with outsourcing success (hypothesis 4). The variance in the outsourcing success is explained by relational-oriented exchange. Specifically, this study found that outsourcing performance in terms of implementation factors the company undertakes in order to achieve its objectives, goals and expectations may be enhanced through strategic relationships.

Following the assessment of the measurement model, the hypothesized relationships in the structural model are tested. The results of the analysis are depicted in Figure 1 and Table 3. The results indicated that Strategic Relationship ( $\beta = 0.618$ ,  $p < 0.05$ ) are positively related to Performance, explaining 38.2% of the variance present in Performance. The results provide sufficient evidence to support the hypotheses H1 tested in this study.

Table 3: Path coefficients and Hypothesis Testing

Hypothesis		Beta	Std. Error	t value	Decision
H1	ROE-> Outsourcing Success	0.618	0.050	12.311	Supported

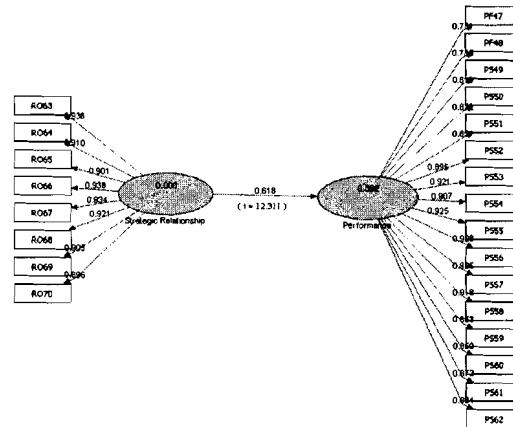


Fig. 2: Results of PLS analysis

#### 4. Discussion and Conclusion

This study contributes to the identification of supplier-manufacturer relationship dimensions on whether that relationship impacts upon organizations' outsourcing success. The dimensions include process and structure. Specifically, first, this study suggests that improvement in the supplier revenue may be achieved through relationship quality between supplier and manufacturer. Second, the improvement in the strategic perspective or internal process performance may be achieved through relationship quality between supplier-manufacturer. These findings would help managers to develop effective strategies or practices and decide the appropriate level of investment in outsourcing management.

Therefore, the significant results on the relationship of relational-oriented exchange and outsourcing success variable in the Malaysia electric and electronic industry sample are consistent with relational view theory and confirm previous study that relational-oriented exchanges enhance outsourcing performance. An extensive of inter-organizational relationship performance literature agrees that relational-oriented exchange reduce the level of conflict, refrain from relationship-damaging behavior and increase consistency in financial result and cooperative behavior. The researchers argue that strategic relationship can contribute to improving economically efficient exchange relationships under conditions of uncertainty and ambiguity and therefore should lead to outsourcing success.

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